

When is a leader considered as a good leader? Perceived impact on teammates' confidence and social acceptance as key ingredients.

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Abstract

Effective leadership is perceived as a key factor for optimal team functioning. The present study aimed to identify the characteristics of athlete leaders with respect to four different leadership roles (i.e., task leader, motivational leader, social leader, and external leader), while recognizing the surrounding team context. Furthermore, we aimed to identify the most decisive characteristics for a player's perceived leadership quality on each of these leadership roles. An on-line survey was completed by 4451 players and coaches within nine different team sports in Flanders (Belgium). The present study assessed leaders' characteristics in comparison with the other players in the team. The findings revealed two decisive characteristics for athlete leaders' perceived leadership quality: (1) the impact on teammates' team confidence, and (2) being socially well accepted by the other players. Furthermore, informal leaders outscored the team captain on all leadership characteristics, except team tenure. The study findings were similar for both players and coaches in male and female teams.

Keywords: leader attributes, informal leadership, team captain, peer leadership, leadership development, coaching

When is a leader considered as a good leader? Perceived impact on teammates' confidence and social acceptance as key ingredients.

High-quality leadership is essential for the numerous groups that shape the way we live, work and play. Countries are needing good leaders, the quality of top management is stated as the crucial factor for the success of a business organization, and the quality of teachers is assumed to determine the education of our future generation (Chelladurai, 2012).

Also in sports, effective leadership is perceived as one of the key determinants for optimal team functioning (Hackman & Wageman, 2005). Therefore, the abundant research on coach leadership and, more specifically, on the characteristics of high-quality coaches is not surprising. By contrast, leadership within the team (i.e., athlete leadership) has only recently become the object of sport leadership research (for a comprehensive literature overview, we refer to the work of Cotterill & Fransen, 2016).

The rapidly growing body of athlete leadership research focused on how to identify athlete leaders within the team (Fransen, Van Puyenbroeck, et al., 2015b), on the different roles athlete leaders occupy (Fransen, Vanbeselaere, De Cuyper, Vande Broek, & Boen, 2014; Loughhead, Hardy, & Eys, 2006), and on the advantages of having high-quality athlete leaders in the team. With respect to the advantages, high-quality athlete leadership in the team has been associated with high levels of athlete satisfaction, team identification, task cohesion, social cohesion, and even with improved team performance (Callow, Smith, Hardy, Arthur, & Hardy, 2009; Crozier, Loughhead, & Munroe-Chandler, 2013; Fransen, Van Puyenbroeck, et al., 2015a; Fransen, Vanbeselaere, et al., 2014; Fransen et al., 2012; Loughhead, Fransen, Van Puyenbroeck, Hoffmann, & Boen, 2016; Paradis & Loughhead, 2012; Price & Weiss, 2011, 2013; Vincer & Loughhead, 2010). Furthermore, two recent experimental studies have highlighted the ability of athlete leaders to influence teammates' team confidence by expressing high or low team confidence (Fransen, Haslam, et al., 2015; Fransen, et al., 2016).

The findings of these studies revealed an effect of confidence contagion such that team members had greater team confidence when the leader expressed high rather than low confidence in the team's success. These findings substantiate earlier research pointing at the impact of athlete leaders on their teammates' team confidence (Hoyt, Murphy, Halverson, & Watson, 2003; Ronglan, 2007; Watson, Chemers, & Preiser, 2001). In addition to this contagion of confidence, both experimental studies also revealed an effect on performance; when the athlete leader expressed high confidence in his team players' performance improved during the experiment, whereas players' performance deteriorated when the leader expressed a lack of team confidence.

In the search for the recipe of the perfect leader, several attributes have been suggested to be characteristic for athlete leaders in addition to the expression of team confidence. For example, sport competence, playing time, and starting status were put forward as typical characteristics for athlete leaders (Moran & Weiss, 2006; Price & Weiss, 2011). Other characteristics cited by previous research include peer acceptance and off-field friendship (Moran & Weiss, 2006; Tropp & Landers, 1979; Yukelson, Weinberg, Richardson, & Jackson, 1983). Fransen, Van Puyenbroeck, et al. (2015a) corroborated these findings by revealing that the degree to which teammates felt socially connected to a specific player determined that player's perceived leadership quality. Loughead et al. (2016) also revealed a close relation between athlete leadership quality and team cohesion. It thus seems that leadership and social relations are closely interrelated.

In order to assess which of these leadership characteristics are most decisive for the quality of an athlete leader, we needed a comprehensive list of possible characteristics. Therefore, we conducted a detailed literature review, followed by a meeting with a focus group deciding on the content validity of the items in the list. The focus group included three professional researchers in the area of sport psychology, one applied sport psychologist, and

the head coach of the Belgian women's national volleyball team. The discussion resulted in a 27-item list of possible attributes (see Table 1), which has been used in the current study.

Four significant shortcomings of the previous literature on athlete leadership attributes can be noted, which are addressed by the current manuscript. The first shortcoming in the literature so far is that athlete leaders' characteristics have been measured in absolute terms (e.g., Loughhead & Hardy, 2005; Price & Weiss, 2011). For example, the experience of an athlete was typically assessed by the absolute number of the years of experience. However, leadership is a socially constructed phenomenon and thus highly dependent on the surrounding context. Therefore, measuring leader attributes in absolute terms conflicts with the context-dependency of athlete leadership. For example, a young player with two years of experience might function as a leader on a youth team with novice players but not on an adult team with more experienced players. As a result, the perceived effectiveness as a leader might not be determined by the attributes of the leader in absolute terms, but by the leader's attributes relative to the attributes of the other players on the team. In order to address the need for a context-dependent measure of athlete leadership, the present study measured the characteristics of athlete leaders in a relative way by comparing the characteristics of the leader with the characteristics of the other players on the team.

The second shortcoming is that previous studies, in their search for leadership attributes, predominantly focused on *general* athlete leadership. Fransen, Vanbeselaere, et al. (2014) however distinguished between four different leadership roles that athletes can occupy: (1) the task leader, who helps the team to focus on its goals and who gives his/her teammates tactical advice during the game; (2) the motivational leader, who is the biggest motivator on the field and steers teammates' emotions in the right direction to perform optimally as a team; (3) the social leader, who takes care of a good atmosphere within the team besides the field, thereby serving as a confidant for his/her teammates; and (4) the external leader, who handles

the communication with club management, media, and sponsors. In contrast with most previous research, the present study did not examine the attributes of athlete leaders in general, but instead, went more in-depth by identifying the specific characteristics for each of the four leadership roles (i.e., task, motivational, social, and external leadership). In order to tailor leadership development programs to the specific leadership roles that athlete leaders occupy this approach is highly necessitated.

The third shortcoming in the research on leadership attributes relates to the distinction between formal and informal athlete leaders. Formal athlete leaders are the appointed team captains on the team, while informal athlete leaders do not occupy a formal leadership function, but receive their leadership status as a result of the interactions that occur among group members (Loughead et al., 2006). Recent research demonstrated that on most teams the informal leaders, rather than the team captains, take the lead on the four different leadership roles (Fransen, Vanbeselaere, et al., 2014). However, it still remains unclear which attributes distinguish the formal team captain from the informal leaders. Identifying these differentiating attributes would provide more insight in why a player is assigned to fulfill the role of team captain. Therefore, the present study assessed the most frequently cited leader characteristics in previous literature for both the formal team captain and the task, motivational, social, and external leader. As such, it can be determined whether attributes such as playing time, team tenure, and sport competence are most characteristic of either formal or informal athlete leaders.

The final shortcoming is that previous research on leadership attributes only takes into account the perceptions of the players, thereby lacking information on the perceptions of coaches (Dupuis, Bloom, & Loughead, 2006; Moran & Weiss, 2006; Price & Weiss, 2011; Tropp & Landers, 1979; Voelker, Gould, & Crawford, 2011). The sole focus on players' perceptions is unfortunate, given that it is often the coach, rather than the athletes, who is

deciding on leadership issues in the team (e.g., appointing the team captain). The fact that players often perceive the informal leaders, rather than the team captain, as the real leaders in the team (Fransen, Vanbeselaere, et al., 2014) may be due to different perceptions of players and coaches when it comes to the factors determining the leadership quality of a player. To obtain more insight in the similarities and differences between these parties, we included both coaches and players and conducted separate analyses.

As outlined above, the present study aimed to extend current literature by addressing these shortcomings. First, it was hypothesized that leader attributes related to the on-field play (e.g., sport competence, years of experience, and playing time) would be more characteristic of the task and motivational leaders, because the main function of these leaders lies on the field (H1a). By contrast, attributes related to the social atmosphere on the team (e.g., social acceptance by teammates) were expected to be more characteristic of the social leader (H1b).

Second, previous research has established that high-quality athlete leaders are able to impact their teammates' confidence in the abilities of their team to win the game (Fransen, Coffee, et al., 2014; Fransen, Haslam, et al., 2015; Fransen, Vanbeselaere, De Cuyper, Vande Broek, & Boen, 2015; Fransen et al., 2012; Hoyt et al., 2003; Ronglan, 2007; Watson et al., 2001). Therefore, it was predicted that the leader's impact on teammates' team confidence would be most decisive for the leader's perceived leadership quality (H2).

Third, Fransen, Vanbeselaere, et al. (2014) demonstrated that the informal leaders, rather than the team captain, take the lead on the different leadership roles. Therefore, we expected that informal leaders would outscore the team captain on all leadership attributes (H3).

Fourth, we hypothesized that players and coaches would have similar perceptions regarding the characteristic attributes for each of the different leadership roles, given that objective observations are examined (H4a). However, with regard to the indicators that

predict the perceived quality of the different leaders, which is more subjective in nature, differences between coaches and players can be expected. We hypothesized that coaches rather would favor the *intrapersonal* characteristics (e.g., sport competence, experience, etc.), while players would indicate the *interpersonal* characteristics as more predictive for a leader's quality (H4b). Given the objective nature of team captain's performance on the suggested characteristics, we expected no differences on this regard between players and coaches (H4c).

Method

Procedure

Cooperation was established with the Flemish Coaches School, the organization for sport-specific schooling of coaches in Flanders. Based on their database of all licensed coaches, we invited 5,535 qualified coaches from nine different team sports (i.e., basketball, volleyball, soccer, handball, netball, hockey, rugby, water polo, and ice hockey) to complete an online survey. Furthermore, the coaches were asked to encourage their players to participate in the study as well. To reach also the nonqualified coaches and their teams, we established cooperation with several Flemish sport federations. In total, 7,977 coaches and 8,509 players were invited to participate in our study. The coaches and players who did not respond were sent an e-mail reminder two weeks later. No rewards were given for participation, but participants' confidentiality was guaranteed.

Participants

In total, 4,451 participants (3,193 players and 1,258 coaches) completed the survey instrument, which corresponded to an approximate response rate of 27%. The players were on average, 23.9 years old ($SD = 7.1$) and had 14.2 years of experience ($SD = 7.0$), whereas the coaches were on average 41.9 years old ($SD = 12.2$) and had 14.0 years of coaching experience ($SD = 10.2$). The sample included participants from nine different team sports in Flanders; basketball ($n = 1,959$; 44%), handball ($n = 116$; 3%), hockey ($n = 127$; 3%), ice

hockey ($n = 72$; 2%), netball ($n = 118$; 3%), rugby ($n = 84$; 2%), soccer ($n = 589$; 13%), volleyball ($n = 1287$; 29%), and water polo ($n = 99$; 2%). Players and coaches from various competitive levels participated, ranging from the elite level (6%), over national (25%), provincial (53%), and regional levels (7%), to the recreational level (3%) and youth level (6%).

In the present study, we have used the technique of cross-validation to establish the reliability of our results by assessing how the results of the adopted analyses generalize to an independent data set. More specifically, we partitioned our data sample into two randomly selected subsets, after which we performed the analyses on one subset (subsample 1), and validated the results on the other subset (subsample 2). Both subsamples contained a similar number of players and coaches (i.e., 1,604 players and 622 coaches in subsample 1; 1,589 players and 636 coaches in subsample 2) and revealed a similar gender balance (i.e., 1,520 male and 706 female participants in subsample 1; 1,532 male and 693 female participants in subsample 2), which allows for a reliable comparison across these categories.

Data from this sample have been used for three other manuscripts (Fransen, Coffee, et al., 2014; Fransen, Kleinert, Dithurbide, Vanbeselaere, & Boen, 2014b; Fransen, Vanbeselaere, et al., 2014). However, these manuscripts focused on different research questions and used different variables of interest. More specifically, the first manuscript focused on the leadership classification and exploring the role of the team captain as formal leader of the team (Fransen, Vanbeselaere, et al., 2014); the second manuscript established the validity of the Observational Collective Efficacy Scale for Sports (OCESS; Fransen, Kleinert, Dithurbide, Vanbeselaere, & Boen, 2014a); and the third manuscript identified the underlying mechanisms of how athlete leaders impact their team's confidence (Fransen, Coffee, et al., 2014). Moreover, none of the leader characteristics that are described in the current manuscript has been included in any of the above manuscripts.

Measures

Athlete leadership quality. We used the athlete leadership classification developed by Fransen, Vanbeselaere, et al. (2014) to identify the athlete leaders within each team. After presenting the description of each leadership role (i.e., the original definitions of task, motivational, social, and external leader, as proposed by Fransen, Vanbeselaere, et al.(2014)), participants were asked to indicate which player on their team corresponded best with the description of each of the four leadership roles. Subsequently, the perceived quality of each of the appointed leaders with respect to their specific leadership role was assessed on a 7-point Likert scale, ranging from -3 (*very poor*) to 3 (*very good*).

Characteristics associated with the athlete leaders. To address the need for context-dependent measures of athlete leadership, the present study assessed the characteristics of athlete leaders in a relative way by comparing the leader with the other players in the team. The best leader on each of the four leadership roles was evaluated with respect to both personal characteristics (e.g., experience, competence) and behaviors (e.g., communicating, encouraging). To compose a list of leader-specific attributes, we conducted a detailed literature review. Afterwards, a focus group met, including three professional researchers in the area of sport psychology, one applied sport psychologist, and the head coach of the Belgian women's national volleyball team. The discussion resulted in a 27-item list of possible attributes that distinguish the athlete leaders from other players in the team. We will now outline the details of the characteristics and behaviors that were included in this list.

Personal characteristics. With respect to the personal characteristics, two different types of assessment scales were used. The status of the player (starter versus bench player) and the average playing time were assessed on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). More specifically, a score of 5 on player's status meant that this player was always a starter, a score of 1 referred to a bench player.

The other characteristics (age, years of sport experience, highest level ever played, team tenure, sport competence, social acceptance by the teammates, and optimism) were assessed relatively to their teammates on a scale, which included the following labels: -3 (*the worst of my team*), -2 (*clearly worse than average*), -1 (*a little worse than average*), 0 (*average*), 1 (*a little better than average*), 2 (*clearly better than average*), and 3 (*the best of my team*). An example characteristic is “Compared to my teammates, this person is optimistic.”

Leadership behaviors. Regarding the behaviors of the leaders, we measured both perceptions of body language (e.g., expression of enthusiasm, self-confidence, positive emotions) and perceptions of actual behaviors (e.g., communicating, effort on training, cheering). All behavioral characteristics were measured in comparison with the other players within the team on a relative scale, anchored by -3 (*the worst of my team*) and 3 (*the best of my team*). An example is “Compared to my teammates, this person exerts most effort on the field.”

Impact on participants’ team confidence. With respect to the leader’s impact on his/her teammates, we focused on players’ and coaches’ team confidence, and more specifically the perception of winning confidence contagion (“If this leader clearly believes during the game that our team will win the game, I will have more confidence that our team will win”). Team confidence contagion was measured on a scale ranging from -3 (*strongly disagree*) to 3 (*strongly agree*).

Characteristics of the team captain. It is important to note that it is plausible that the team captain equals the appointed task, motivational, social, and/or external leader. However, it can also be that other players are perceived as better athlete leaders than the team captain. Therefore, each participant had to rate the characteristics of the formal team captain of his/her team. More specifically, we restricted the questionnaire to the most cited leader characteristics

in previous literature, namely starting status (starter versus bench player), average playing time, age, sport experience, team tenure, highest level ever played, sport competence, and training effort. These characteristics were measured in comparison with the other players within the same team on a scale anchored by -3 (*the worst of my team*) and 3 (*the best of my team*).

Results

Characteristic Attributes for the Four Leadership Roles

Both players and coaches rated each of the four appointed athlete leaders on their team (i.e., task leader, motivational leader, social leader, and external leader) on 27 characteristics. Table 1 presents the mean values of the measured characteristics for each leadership role, based on the data of subsample 1, thereby demonstrating to what extent each of these characteristics is associated with each of the four different leadership roles, in the perception of both players and coaches. The bold values represent which leader outscored the other leaders on a specific characteristic. Paired t-tests were conducted to examine whether the best leader significantly outscored the second best leader on that specific characteristic. Moreover, the characteristics most strongly associated with each of the leadership roles (i.e., the values in bold) were grouped together. It is important to note that all leaders scored significantly above the scale midpoint '0' on all characteristics (all $p < .001$), which means that they are perceived to express these characteristics above team average. In other words, all these attributes are more characteristic for leaders than for the average non-leader.

With regard to the four leadership roles, our findings indicate that the task leader outscored the other leaders regarding his/her sport-specific talent (e.g., best player, most experienced player, most playing time, and played on highest level), followed by the motivational leader. This finding supports the first hypothesis (H1a), in that the on-field attributes are most characteristic for the on-field athlete leaders. Furthermore, the task leader

was characterized by his/her ability to create a turnaround when the team is behind. The motivational leader was perceived as having a key impact on teammates' motivation and confidence. A positive body language, an optimistic attitude, strong enthusiasm, and the expression of team confidence were all perceived as characteristic attributes for the motivational leader. The social leader was socially best accepted in the team, which confirms H1b that attributes related to the social atmosphere in the team are most characteristic for the social leader. In addition, the external leader outscored the other leaders in age and team tenure.

In line with H4a, the perceptions of players and coaches were highly similar; both identified the same characterizing attributes for each of the four leadership roles. The only difference that emerged was with respect to leaders' influence on teammates' confidence; players identified this characteristic as more common for the motivational leader, whereas coaches perceived it to be also characteristic for the task leader. However, further statistical analyses revealed that these differences between task and motivational leader were not significant, neither for players, nor for coaches. Not only did players and coaches identify the same characteristics for a particular leader, also a strong resemblance appeared with regard of the perceived strength of the particular characteristics; the same characteristics obtained the highest values from both players and coaches.

These results were validated by subsample 2. The results were highly similar to the ones of subsample 1; the same characteristics were identified for each of the leadership roles and both coaches and players ranked the same attributes as most characteristic for each leader. The only difference that emerged among the 27 attributes concerns the 'effort exerted outside the field'; players perceived this attribute as most characteristic for external leader, whereas coaches perceived it as more characteristic for social leaders, followed by external leaders, however these differences were not significant. The high similarity between both randomly

selected subsamples strengthens the reliability of our findings. The results for the entire dataset, including both subsample 1 and subsample 2 can be found in Appendix A.

Attributes of High-Quality Athlete Leaders

Although it is interesting to know which attributes are characteristic for a specific type of leader, it is even more important to know which attributes are related to the quality of an athlete leader. In other words, which characteristics cause the leader to be perceived as a good leader by the other players on the team? Separate linear regression analyses were performed for each leadership role to investigate how players and coaches perceived each characteristic to be important for the leadership quality of task, motivational, social, and external leaders. In each regression, the perceived quality of that leader was the criterion and all 27 characteristics described in Table 1 served as predictor variables. Table 2 presents the standardized regression coefficients for the characteristics that have a significant relation ($p < .001$ for players and $p < .01$ for coaches, given the smaller sample size) with the perceived quality of a leader, using the data of subsample 1. Because our large sample resulted in extreme statistical power, only significant relations with a standardized β -value above .10 will be discussed. These significant relations with β above .10 will be designated as ‘relevant’.

In line with the second hypothesis (H2), our findings demonstrated that players perceived the leader’s perceived impact on their team confidence to be most predictive for the quality of each of the four leadership roles. Coaches, however, did not perceive this attribute as characteristic for a players’ leadership quality. In this regard, it should be emphasized that this attribute for coaches represented leader’s impact on coaches’ team confidence, not on teammates’ team confidence, and as such represents a different attribute than for players. We can conclude that leaders’ impact on teammates’ team confidence is highly predictive for the quality of a leader, whereas the leaders’ impact on the coach’s team confidence is not perceived as important.

The second most predictive characteristic for players was the social acceptance by teammates. In other words, the more athlete leaders are accepted by their teammates, the better their perceived leadership quality. The leader's social acceptance, however, did not emerge as relevant attribute for coaches in determining the leadership quality. These findings support H4b by revealing differences between the perceptions of players and coaches and by highlighting players' preference for interpersonal rather than intrapersonal characteristics.

Other decisive characteristics for task leadership quality were expression of team confidence when being behind (according to the players) and encouragement during the game (according to the coaches). For motivational leadership quality, coaches added the maintenance of communication when the team was behind. Finally, coaches perceived the exerted effort outside the field as decisive for both the social and the external leadership quality, where players agreed on the latter. In contrast with H4b, coaches did not prefer intrapersonal characteristics, but also listed interpersonal skills, such as communication as decisive for leadership quality.

The cross-validation procedure revealed that subsample 2 confirmed the main findings; players (in contrast to coaches) perceived leaders' impact on their team confidence as very predictive for the leaders' quality, a finding that held for each of the different leadership roles. Moreover, also in this subsample players perceived the leaders' social acceptance in the team as a significant predictor for the leadership quality of on-field leaders. Players and coaches agreed on the fact that social acceptance was also predictive for social leaders' quality. Both players and coaches perceived the exerted effort outside the field as significant attribute for off-field leaders. Other attributes for leadership quality that emerged in this subsample for the quality of on-field leaders were encouragement and communication when the team was performing poorly. The results for the entire sample, including both subsamples, can be found in Appendix B.

After identifying the differences between players and coaches, we also established differences with respect to team gender (i.e., male or female teams) by conducting separate linear regression analyses for each of these categories on the entire sample. Appendix C presents the relevant results ($\beta > .10$; $p < .01$) emerging from the regression analyses for male and female teams separately, for each of the four leadership roles. We can conclude that, apart from some small differences, the results for male and female teams are very similar for each of the four leadership roles. In other words, in both male and female teams, the same predictors determined the perceived quality of task, motivational, social, and external leaders.

Attributes of Formal versus Informal Leadership

Previous research has revealed that informal leaders, rather than the team captain, take the lead within sport teams. In order to gain a better understanding of the leadership role of the team captain, we compared the team captain with the other leaders on the most frequently cited leader attributes in literature (see Table 3 based on subsample 1). Our findings confirmed H4c by demonstrating a high consistency between the perceptions of players and coaches. With regard to the characteristics related to players' sport competence (i.e., starting status, playing time, sport experience, highest level ever played, and sport competence), the task leader outscored the other leaders and the team captain. With respect to training effort, players and coaches agreed that the motivational leader scored the highest and significantly outscored the team captain. The external leader was according to both players and coaches on average the oldest leader on the team. With regard to team tenure, the team captain, together with the external leader obtained the highest scores. On average, the team captain was thus the player who played the longest on the team, while on all the other characteristics, there was at least one other leader who outscored the team captain. Subsample 2 revealed highly similar findings, thereby further confirming these conclusions. The results for the entire sample, including both subsample 1 and subsample 2 can be found in Appendix D.

To obtain more insight in possible difference between male and female teams in the entire sample, Appendix E presents the mean values for male and female teams separately. The results reveal a high correspondence between the characteristics of formal and informal leaders in male and female teams. Only two differences emerged: (1) in male teams, the motivational leader significantly outscored the task leader on training effort, in female teams it was the other way around; (2) the female team captains were demonstrated to play the longest in their team, whereas in male teams no significant differences emerged between the team captain and the external leader. In line with H3, we can conclude that overall, other leaders significantly outscored the team captain on most of the measured attributes, according to both players and coaches in male and female teams.

Discussion

The present study extended previous research in four ways. First, we used a context-dependent scale to assess the distinctive leader characteristics. Because players and coaches had to assess a leader's relative characteristics (i.e., characteristics of the leader had to be compared with the characteristics of the other players on the team), this measure accounts for the team-specificity of athlete leadership. Second, instead of focusing on the characteristics of athlete leaders in general, we identified specific characteristics for each of the four leadership roles. Third, we provided more insight in the leadership function of the team captain by comparing the team captain with the other appointed leaders in the team on often cited leader characteristics. Fourth, we used a large sample, including players and coaches of male and female teams, which allowed us to adopt the technique of cross-validation, thereby validating the findings of one randomly selected subsample in another subsample. The high correspondence between the results in both subsets established the reliability of our findings. Furthermore, the variety in our dataset allowed us to explore differences between coaches and players and between male and female participants.

Characteristic Attributes for the Four Leadership Roles

Our findings were very similar for players and coaches and revealed that the task leader outscored the other leaders in sport competence and playing time, followed by the motivational leader. This finding confirms H1a that on-field attributes are most characteristic for on-field athlete leaders. Furthermore, our results corroborated previous research, which revealed that all task leaders were starters, whereas only 50% of the social leaders had a starting position (Rees & Segal, 1984). In addition, the task leader was perceived to have an important role as tactical communicator. Furthermore, the capability to create a turnaround when the team is performing poorly was also indicated as a characteristic attribute for a task leader.

While the task leader focused on tactical communication, the motivational leader was perceived as the emotional communicator within the team. The leader's optimism and enthusiasm, together with a positive body language expressing team confidence, caused the motivational leader to have the highest impact on the team confidence of his/her teammates. While previous research already indicated that athlete leaders are a very important source of their teammates' team confidence (Fransen, et al., 2016; Fransen, Vanbeselaere, et al., 2015; Fransen et al., 2012), the present study adds that it is the motivational leader in particular, together with the task leader, who play the key role in optimizing teammates' team confidence. Considering that players' team confidence has been found to strongly influence goal setting, effort, and persistence (Bray, 2004; Greenlees, Graydon, & Maynard, 1999), our results indicated that athlete leaders, and the on-field leaders in particular, might serve as important catalysts in the relationship between team confidence and performance-related outcomes.

Both the social leader and the external leader are characterized by the effort they exert for their team outside the field. Furthermore, in line with H1b, the social leader is the most

socially accepted leader by the other players on the team, which is consistent with earlier findings that demonstrated peer acceptance to be a typical characteristic for athlete leaders (Moran & Weiss, 2006; Tropp & Landers, 1979; Yukelson et al., 1983). In accordance with previous findings (Loughead et al., 2006), the external leader is on average the oldest player on the team with the longest team tenure.

Attributes of High-Quality Athlete Leaders

In order to improve players' leadership qualities, it is essential to know which characteristics are most decisive for the quality of a leader. In line with H2, our results suggested that leaders with the strongest impact on the team confidence of their teammates were perceived as the best leaders by the players. This finding held for all four leadership roles and confirmed the perception of ice hockey coaches that leaders have a large impact on their team by sharing their desire to win (Bucci, Bloom, Loughead, & Caron, 2012). Furthermore, these results are in line with earlier findings that athlete leaders are an important source of their teammates' team confidence (Fransen, Coffee, et al., 2014; Fransen, Haslam, et al., 2015; Fransen, et al., 2016; Fransen, Vanbeselaere, et al., 2015; Fransen et al., 2012; Hoyt et al., 2003; Ronglan, 2007; Watson et al., 2001).

In addition, players perceived being socially well accepted by the team as the second most important predictor for the perceived quality of task, motivational, and social leaders. This predictor can be related with the most important predictor according to the players (i.e., impact on teammates' team confidence) through the emotional contagion theory. There is abundant evidence that people automatically mimic other persons' emotional behavior (e.g., Hatfield, Cacioppo, & Rapson, 1994; Totterdell, 2000). More specifically, a field study among engineers revealed the presence of emotional contagion between leaders and followers: leaders' positivity had a positive effect on followers' positivity (Avey, Avolio, & Luthans, 2011). Social acceptance has the potential to boost this contagion process, because it

has been demonstrated that people who like each other more (i.e., higher social acceptance) exhibit more spontaneous mimicry (McIntosh, 2006). Although more research is necessary, we suggest that social acceptance functions as a moderator of the relation between team confidence expressed by the leader and the team confidence of the other players. In other words, the more the leader is socially accepted by the team, the stronger the emotional contagion will occur, and the faster players will adopt the team confidence standards of their leader. In short, the more the leader is socially accepted by his/her teammates, the higher the leader's impact on teammates' confidence.

It should be noted, though, that coaches had clearly different perceptions on the characteristics that determine the quality of athlete leaders. Indeed, coaches tended to agree with the previous findings of Holmes, McNeil, and Adorna (2010) that likeability is not a requirement for good leadership. Furthermore coaches did not perceive athlete leader's impact on their team confidence as a predictor for athletes' leadership quality. These differences between coaches and players may explain why the team captains, often appointed by the coach, are not seen as the real leaders by the athletes within the team (Fransen, Vanbeselaere, et al., 2014). In order to foster effective leadership, coaches can thus be recommended to take also these interpersonal skills (i.e., impact teammates' team confidence, being socially accepted in the team) into account when appointing their leaders.

Attributes of Formal versus Informal Leadership

With regard to the team captain's characteristic attributes, players' and coaches' perceptions were highly similar and revealed that the captain only outscored the other leaders in terms of team tenure. It thus seems that, instead of the leadership qualities of a player, a player's team tenure might be the implicit criterion to assign a player as team captain. It is even questionable whether team tenure is in fact a requested attribute for high-quality leadership.

These findings corroborate previous research, demonstrating that in most teams informal leaders, rather than the captain, take the lead. However, it should be noted that the team captain always scored above the midpoint of the scale, implying that the team captain scored better on these attributes than the average team member. Although many studies on athlete leadership still solely focus on the role of the team captain (Dupuis et al., 2006; Grandzol, Perlis, & Draina, 2010; Voelker et al., 2011), our findings emphasize that informal athlete leadership, exhibited by other players than the team captain, is indeed very important and can certainly no longer be ignored.

Strengths and Limitations

When interpreting the present findings, it is worth considering the strengths and limitations of the current study. A major strength of this study is the large number of participating teams, including male and female athletes and coaches across diverse team sports and levels of competition. The consistency in the results between the perceptions of players and coaches and between male and female teams contributes to the reliability of the study findings.

Second, a new context-dependent measure was used to assess the characteristic attributes of the leaders on all four leadership roles. In this regard, the attributes were not measured in an absolute way (e.g., years of experience), but relative to the other team members (e.g., more/less experience than other team members). Because leadership strongly depends on its surrounding context, it is recommended for future research to take into account the team-specific nature of leadership when examining leader attributes.

Third, in contrast with previous studies examining the attributes of athlete leaders (Loughead & Hardy, 2005; Moran & Weiss, 2006; Rees & Segal, 1984; Tropp & Landers, 1979; Yukelson et al., 1983), the present study was not conducted in the United States or Canada, but instead in Belgium, using Dutch questionnaires. Although the results of our study

are limited to this particular population, it noteworthy that similar findings emerged as in previous American and Canadian studies, which supports the cross-cultural validity of these findings.

Fourth, a variety of characteristics were investigated, ranging from leaders' personal characteristics, over leaders' behaviors, to leaders' impact on teammates. Despite this variety in examined characteristics, it should be noted that we assessed only a limited number of possible leader characteristics. Further research should examine whether other attributes might be more characteristic for athlete leadership quality. In particular with regard to the team captain, it is possible that this formal leader has other qualities than the ones we studied. For instance, the captain's function might be characterized by other issues than leadership, such as being the confidant of the coach. Future research can clarify the exact function of the team captain by conducting interviews with coaches and players about the function of the team captain and the selection criteria used to assign this function.

Not all people can lead. Some are offered the position but are not equipped with the tools necessary to fulfill it and others may not be given the opportunity. From a practical perspective, coaches can rely on these findings to elect their team captain more consciously by taking leadership qualities into account, rather than team tenure. Identifying the informal leaders within the team can help coaches to guide these leaders and further develop their leadership capabilities. Our findings suggest that coaches should stimulate their athlete leaders to express their team confidence, to encourage their teammates, and to show their enthusiasm, even when their team is losing. As a result, this strengthened athlete leadership lays the foundation of optimal team functioning.

References

- Avey, J. B., Avolio, B. J., & Luthans, F. (2011). Experimentally analyzing the impact of leader positivity on follower positivity and performance. *Leadership Quarterly*, 22(2), 282-294. doi:10.1016/j.leaqua.2011.02.004
- Bray, S. R. (2004). Collective efficacy, group goals, and group performance of a muscular endurance task. *Small Group Research*, 35(2), 230-238. doi:10.1177/1046496403260531
- Bucci, J., Bloom, G. A., Loughhead, T. M., & Caron, J. G. (2012). Ice hockey coaches' perceptions of athlete leadership. *Journal of Applied Sport Psychology*, 24(3), 243-259. doi:10.1080/10413200.2011.636416
- Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement of transformational leadership and its relationship with team cohesion and performance level. *Journal of Applied Sport Psychology*, 21(4), 395-412. doi:10.1080/10413200903204754
- Chelladurai, P. (2012). Models and measurement of leadership in sport. In G. Tenenbaum, R. C. Eklund, & A. Kamata (Eds.), *Measurement in Sport and Exercise Psychology* (pp. 433-442). Champaign, IL: Human Kinetics.
- Cotterill, S. T., & Fransen, K. (2016). Athlete leadership in sport teams: Current understanding and future directions. *International Review of Sport and Exercise Psychology*. In press.
- Crozier, A. J., Loughhead, T. M., & Munroe-Chandler, K. J. (2013). Examining the benefits of athlete leaders in sport. *Journal of Sport Behavior*, 36(4), 346-364.
- Dupuis, M., Bloom, G. A., & Loughhead, T. M. (2006). Team captains' perceptions of athlete leadership. *Journal of Sport Behavior*, 29(1), 60-78.

- 581 Fransen, K., Coffee, P., Vanbeselaere, N., Slater, M., De Cuyper, B., & Boen, F. (2014). The
582 impact of athlete leaders on team members' team outcome confidence: A test of
583 mediation by team identification and collective efficacy. *The Sport Psychologist*,
584 28(4), 347-360. doi:10.1123/tsp.2013-0141
- 585 Fransen, K., Haslam, S. A., Steffens, N. K., Vanbeselaere, N., De Cuyper, B., & Boen, F.
586 (2015). Believing in us: Exploring leaders' capacity to enhance team confidence and
587 performance by building a sense of shared social identity. *Journal of Experimental*
588 *Psychology: Applied*, 21(1), 89-100. doi:10.1037/xap0000033
- 589 Fransen, K., Kleinert, J., Dithurbide, L., Vanbeselaere, N., & Boen, F. (2014a). Collective
590 efficacy or team outcome confidence? Development and validation of the
591 Observational Collective Efficacy Scale for Sports (OCESS). *International Journal of*
592 *Sport Psychology*, 45(2), 121-137. doi:10.7352/ijsp.2014.45.121
- 593 Fransen, K., Kleinert, J., Dithurbide, L., Vanbeselaere, N., & Boen, F. (2014b). Collective
594 efficacy or team outcome confidence? Development and validation of the
595 Observational Collective Efficacy Scale for Sports (OCESS). *International Journal of*
596 *Sport Psychology*, 45, 121-137. doi:10.7352/IJSP 2014.45.121
- 597 Fransen, K., Steffens, N. K., Haslam, S. A., Vanbeselaere, N., Vande Broek, G., & Boen, F.
598 (2016). We will be champions: Leaders' confidence in 'us' inspires team members'
599 team confidence and performance. *Scandinavian Journal of Medicine and Science in*
600 *Sports*, In press.
- 601 Fransen, K., Van Puyenbroeck, S., Loughhead, T. M., Vanbeselaere, N., De Cuyper, B., Vande
602 Broek, G., & Boen, F. (2015a). The art of athlete leadership: Identifying high-quality
603 leadership at the individual and team level through Social Network Analysis. *Journal*
604 *of Sport & Exercise Psychology*, 37(3), 274-290. doi:10.1123/jsep.2014-0259

- 605 Fransen, K., Van Puyenbroeck, S., Loughhead, T. M., Vanbeselaere, N., De Cuyper, B., Vande
606 Broek, G., & Boen, F. (2015b). Who takes the lead? Social network analysis as
607 pioneering tool to investigate shared leadership within sports teams. *Social Networks*,
608 43, 28-38. doi:10.1016/j.socnet.2015.04.003
- 609 Fransen, K., Vanbeselaere, N., De Cuyper, B., Vande Broek, G., & Boen, F. (2014). The myth
610 of the team captain as principal leader: Extending the athlete leadership classification
611 within sport teams. *Journal of Sports Sciences*, 32(14), 1389-1397.
612 doi:10.1080/02640414.2014.891291
- 613 Fransen, K., Vanbeselaere, N., De Cuyper, B., Vande Broek, G., & Boen, F. (2015).
614 Perceived sources of team confidence in soccer and basketball. *Medicine and Science*
615 *in Sports and Exercise*, 47(7), 1470–1484. doi:10.1249/MSS.0000000000000561
- 616 Fransen, K., Vanbeselaere, N., Exadaktylos, V., Vande Broek, G., De Cuyper, B., Berckmans,
617 D., . . . Boen, F. (2012). "Yes, we can!": Perceptions of collective efficacy sources in
618 volleyball. *Journal of Sports Sciences*, 30(7), 641-649.
619 doi:10.1080/02640414.2011.653579
- 620 Grandzol, C., Perlis, S., & Draina, L. (2010). Leadership development of team captains in
621 collegiate varsity athletics. *Journal of College Student Development*, 51(4), 403-418.
- 622 Greenlees, I. A., Graydon, J. K., & Maynard, I. W. (1999). The impact of collective efficacy
623 beliefs on effort and persistence in a group task. *Journal of Sports Sciences*, 17(2),
624 151-158.
- 625 Hackman, J. R., & Wageman, R. (2005). A theory of team coaching. *Academy of*
626 *Management Review*, 30(2), 269-287.
- 627 Hatfield, E., Cacioppo, J., & Rapson, R. L. (1994). *Emotional contagion*. New York:
628 Cambridge University Press.

- 629 Holmes, R. M., McNeil, M., & Adorna, P. (2010). Student athletes' perceptions of formal and
630 informal team leaders. *Journal of Sport Behavior*, 33(4), 442-465.
- 631 Hoyt, C. L., Murphy, S. E., Halverson, S. K., & Watson, C. B. (2003). Group leadership:
632 Efficacy and effectiveness. *Group Dynamics: Theory, Research, and Practice*, 7(4),
633 259-274. doi:10.1037/1089-2699.7.4.259
- 634 Loughhead, T. M., Fransen, K., Van Puyenbroeck, S., Hoffmann, M. D., & Boen, F. (2016).
635 An examination of the relationship between athlete leadership and cohesion using
636 social network analysis. *Journal of Sports Sciences*. In press.
- 637 Loughhead, T. M., & Hardy, J. (2005). An examination of coach and peer leader behaviors in
638 sport. *Psychology of Sport and Exercise*, 6(3), 303-312.
639 doi:10.1016/j.psychsport.2004.02.001
- 640 Loughhead, T. M., Hardy, J., & Eys, M. A. (2006). The nature of athlete leadership. *Journal of*
641 *Sport Behavior*, 29, 142-158.
- 642 McIntosh, D. N. (2006). Spontaneous facial mimicry, liking and emotional contagion. *Polish*
643 *Psychological Bulletin*, 37(1), 31-42.
- 644 Moran, M. M., & Weiss, M. R. (2006). Peer leadership in sport: Links with friendship, peer
645 acceptance, psychological characteristics, and athletic ability. *Journal of Applied Sport*
646 *Psychology*, 18(2), 97-113. doi:10.1080/10413200600653501
- 647 Paradis, K. F., & Loughhead, T. M. (2012). Examining the mediating role of cohesion between
648 athlete leadership and athlete satisfaction in youth sport. *International Journal of*
649 *Sport Psychology*, 43(2), 117-136.
- 650 Price, M. S., & Weiss, M. R. (2011). Peer leadership in sport: Relationships among personal
651 characteristics, leader behaviors, and team outcomes. *Journal of Applied Sport*
652 *Psychology*, 23(1), 49-64. doi:10.1080/10413200.2010.520300

- 653 Price, M. S., & Weiss, M. R. (2013). Relationships among coach leadership, peer leadership,
654 and adolescent athletes' psychosocial and team outcomes: A test of transformational
655 leadership theory. *Journal of Applied Sport Psychology*, 25(2), 265-279.
656 doi:10.1080/10413200.2012.725703
- 657 Rees, C. R., & Segal, M. W. (1984). Role differentiation in groups: The relationship between
658 instrumental and expressive leadership. *Small Group Behavior*, 15(1), 109-123.
- 659 Ronglan, L. T. (2007). Building and communicating collective efficacy: A season-long in-
660 depth study of an elite sport team. *The Sport Psychologist*, 21(1), 78-93.
- 661 Totterdell, P. (2000). Catching moods and hitting runs: Mood linkage and subjective
662 performance in professional sport teams. *Journal of Applied Psychology*, 85(6), 848-
663 859.
- 664 Tropp, K., & Landers, D. M. (1979). Team interaction and the emergence of leadership and
665 interpersonal attraction in field hockey. *Journal of Sport Psychology*, 1, 228-240.
- 666 Vincer, D. J. E., & Loughhead, T. M. (2010). The relationship among athlete leadership
667 behaviors and cohesion in team sports. *The Sport Psychologist*, 24(4), 448-467.
- 668 Voelker, D. K., Gould, D., & Crawford, M. J. (2011). Understanding the experience of high
669 school sport captains. *The Sport Psychologist*, 25(1), 47-66.
- 670 Watson, C. B., Chemers, M. M., & Preiser, N. (2001). Collective efficacy: A multilevel
671 analysis. *Personality and Social Psychology Bulletin*, 27(8), 1057-1068.
- 672 Yukelson, D., Weinberg, R., Richardson, P., & Jackson, A. (1983). Interpersonal attraction
673 and leadership within collegiate sport teams. *Journal of Sport Behavior*, 6(1), 28-36.

674 Table 1

675 *The means for the characteristics of each leadership role, as perceived by both players (P) as*
 676 *coaches (C) in Subsample 1. Paired t-tests reveal whether the difference with the second best*
 677 *leader is significant.*

Characteristics	Task		Motivational		Social		External	
	leader		leader		leader		leader	
	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>
Starter in the game ^a	4.74 ^{***}	4.75 ^{***}	4.44	4.62	4.04	4.29	3.95	4.03
Most playing time ^a	4.58 ^{***}	4.61 ^{***}	4.33	4.43	3.95	4.13	4.45	3.90
Dares to adjust his teammates on the field when they do something wrong	2.09 ^{***}	2.06 ^{***}	1.52	1.55	1.16	1.11	1.26	1.46
Gives the most tactical advice to his teammates during the game	2.01 ^{***}	1.98 ^{***}	1.27	1.26	.83	.91	.99	1.16
Best player	1.76 ^{***}	1.87 ^{***}	1.34	1.50	1.01	1.23	.95	1.02
Most years of experience	1.74 ^{***}	1.51	1.26	1.20	1.13	1.21	1.44	1.45
Radiates the most self-confidence on the field	1.69 ^{***}	1.81 ^{**}	1.41	1.60	1.12	1.25	.99	1.37
Communicates the most when the team is performing poorly	1.58	1.68	1.53	1.53	1.12	1.05	1.02	1.33
Most capable of creating a turnaround in performance when the team is behind	1.51 ^{***}	1.73 ^{***}	1.23	1.50	.87	1.16	.77	1.10
Played on the highest level	1.48 ^{***}	1.20 ^{***}	1.02	.78	.84	.56	.82	.75
Communicates the most when this leader is performing poorly himself	.80	.99	.72	.85	.39	.40	.39	.72
Facial expressions or body language most clearly express positive emotions during the game	2.06	1.92	2.25 ^{***}	2.02	2.14	1.97	1.95	1.81
Most influence on the team confidence of his teammates	2.07	1.80	2.14	1.79	1.88	1.58	1.69	1.78
Encourages his teammates strongly during the game	1.63	1.86	2.10 ^{***}	2.23 ^{***}	1.62	1.71	1.37	1.80
Exerts most effort on the field	1.93	2.18	2.01 ^{***}	2.23 [*]	1.78	2.03	1.70	2.01
Most expression of team confidence when the team is in the lead	1.72	1.80	1.91 ^{***}	1.90 [*]	1.62	1.55	1.50	1.74
Most enthusiastic when the team makes a point	1.45	1.63	1.74 ^{***}	1.85 ^{***}	1.57	1.62	1.34	1.69
Most optimistic	1.40	1.72	1.68 [*]	1.85	1.58	1.76	1.25	1.66
Most expression of team confidence when the team is behind	1.31	1.62	1.57 ^{***}	1.71 [*]	1.19	1.29	1.06	1.48
Cheers the most	1.08	1.23	1.50 [*]	1.59	1.38	1.39	1.07	1.47
Exerts most effort during practice	1.26	1.71	1.32	1.77	1.12	1.53	1.02	1.27

Most enthusiastic when the team is performing poorly	.58	.86	.95***	1.14*	.70	.81	.49	.94
Most enthusiastic when this leader is performing poorly himself	.13	.50	.31**	.56*	.14	.34	.01	.54
Socially best accepted by his teammates	1.56	1.84	1.65	1.94	1.82***	2.13*	1.41	1.87
Exerts most effort outside the field	1.41	1.64	1.47	1.66	1.84	2.02	1.89	2.11
The oldest player	1.04	.96	.77	.84	.89	.92	1.26**	1.34
For the longest time player in the team	.69	.71	.57	.73	.81	.89	1.20**	1.26*

Note. The highest mean value for each characteristic is in boldface.

^aThese characteristics were rated on a 5-point Likert scale (1 to 5). All the other characteristics were measured on a 7-point Likert scale (-3 to 3).

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 2

Regression analyses for each of the four leadership roles evaluating the association between the 27 tested characteristics and the perceived quality of the four different leaders, using the data of subsample 1. Only the standardized regression coefficients of the relevant associations (i.e., $\beta > .10$; $p < .01$ for coaches and $p < .001$ for players and the total sample) are shown.

Specific characteristics	Task leader	Motivational leader	Social leader	External leader
Players in subsample 1	($R^2 = .30$)	($R^2 = .24$)	($R^2 = .19$)	($R^2 = .18$)
Most influence on the team confidence of his teammates	.23**	.26**	.22**	.15**
Socially best accepted by his teammates	.15**	.16**	.18**	
Most expression of team confidence when the team is behind	.12**			
Exerts most effort outside the field				.17**
Coaches in subsample 1	($R^2 = .30$)	($R^2 = .30$)	($R^2 = .21$)	($R^2 = .39$)
Encourages his teammates strongly during the game	.19*			
Communicates the most when the team is performing poorly		.21*		
Exerts most effort outside the field			.19*	.28*
Total subsample 1	($R^2 = .27$)	($R^2 = .23$)	($R^2 = .17$)	($R^2 = .19$)
Most influence on the team confidence of his teammates	.17**	.19**	.18**	.15**
Socially best accepted by his teammates	.14**	.16**	.15**	
Most expression of team confidence when the team is behind	.10**			
Exerts most effort outside the field				.19**

Note. ** $p < .001$; * $p < .01$

Table 3

The mean values for the characteristics of both the team captain and the four leadership roles, as perceived by players (P) and coaches (C) in Subsample 1. The highest value for each characteristic is indicated in bold. Paired *t*-tests reveal whether the difference between the best leader and the team captain is significant.

	Team captain		Task leader		Motivational leader		Social leader		External leader	
	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>
Status (starter versus bench player) ^a	4.61	4.66	4.74 ^{***}	4.75 ^{**}	4.44	4.62	4.04	4.29	3.95	4.03
Average playing time ^a	4.45	4.49	4.58 ^{***}	4.61 ^{***}	4.33	4.43	3.95	4.13	4.45	3.90
Highest level ever played	1.04	.92	1.48 ^{***}	1.20 ^{***}	1.02	.78	.84	.56	.82	.75
Sport competence	1.33	1.51	1.76 ^{***}	1.87 ^{***}	1.34	1.50	1.01	1.23	.95	1.02
Sport experience	1.56	1.46	1.74 ^{***}	1.51	1.26	1.20	1.13	1.21	1.44	1.45
Training effort	1.13	1.53	1.93	2.18	2.01 ^{**}	2.23 ^{***}	1.78	2.03	1.70	2.01
Age	1.12	1.06	1.04	.96	.77	.84	.89	.92	1.26 ^{**}	1.34
Team tenure	1.24	1.21	.69	.71	.57	.73	.81	.89	1.20	1.26

^aThese characteristics were assessed on a scale from 1 (*almost never*) to 5 (*almost always*), while the other characteristics were assessed on a scale from -3 (*the worst of my team*) to 3 (*the best of my team*).

* $p < .05$; ** $p < .01$; *** $p < .001$

701 Appendix A

702 *The characteristics for each leadership role, including means and standard deviations, based*
 703 *on the total dataset as a combination of Subsample 1 and Subsample 2. Paired t-tests reveal*
 704 *whether the difference with the second best leader is significant.*

Characteristics	Task leader	Motivational leader	Social leader	External leader
Starter in the game ^a	4.74^{**} ± .72	4.52 ± .97	4.12 ± 1.33	3.96 ± 1.50
Most playing time ^a	4.58^{**} ± .72	4.37 ± .89	3.99 ± 1.20	3.84 ± 1.40
Dares to adjust his teammates on the field when they do something wrong	2.08^{**} ± .98	1.56 ± 1.18	1.16 ± 1.35	1.31 ± 1.39
Gives the most tactical advice to his teammates during the game	2.02^{**} ± 1.06	1.28 ± 1.27	.84 ± 1.40	1.01 ± 1.53
Best player	1.78^{**} ± .92	1.42 ± 1.06	1.07 ± 1.20	.91 ± 1.30
Radiates the most self-confidence on the field	1.73^{**} ± 1.06	1.49 ± 1.16	1.15 ± 1.20	1.03 ± 1.32
Most years of experience	1.69^{**} ± 1.16	1.26 ± 1.32	1.17 ± 1.33	1.43 ± 1.38
Communicates the most when the team is performing poorly	1.60 ± 1.20	1.53 ± 1.13	1.09 ± 1.26	1.08 ± 1.36
Most capable of creating a turnaround in performance when the team is behind	1.58^{**} ± 1.23	1.36 ± 1.26	.96 ± 1.35	.80 ± 1.46
Played on the highest level	1.37^{**} ± 1.29	.96 ± 1.25	.76 ± 1.28	.79 ± 1.41
Communicates the most when this leader is performing poorly himself	.84 ± 1.43	.78 ± 1.37	.44 ± 1.40	.43 ± 1.50
Facial expressions or body language most clearly express positive emotions during the game	2.03 ± 1.08	2.20^{**} ± .97	2.10 ± 1.04	1.93 ± 1.13
Encourages his teammates strongly during the game	1.72 ± 1.01	2.13^{**} ± .85	1.65 ± 1.03	1.46 ± 1.17
Exerts most effort on the field	2.02 ± 0.91	2.09^{**} ± .87	1.86 ± 1.00	1.74 ± 1.12
Most influence on the team confidence of his teammates	1.97 ± 1.11	2.01 ± 1.07	1.77 ± 1.14	1.71 ± 1.22
Most expression of team confidence when the team is in the lead	1.75 ± 1.00	1.91^{**} ± .94	1.61 ± 1.02	1.55 ± 1.07
Most enthusiastic when the team makes a point	1.51 ± 1.05	1.78^{**} ± 1.00	1.58 ± 1.04	1.43 ± 1.11
Most optimistic	1.50 ± 1.10	1.73[*] ± 1.02	1.64 ± 1.06	1.34 ± 1.16
Most expression of team confidence when the team is behind	1.43 ± 1.17	1.63^{**} ± 1.10	1.23 ± 1.14	1.14 ± 1.21
Cheers the most	1.16 ± 1.29	1.56^{**} ± 1.24	1.40 ± 1.27	1.20 ± 1.30
Exerts most effort during practice	1.41 ± 1.11	1.47[*] ± 1.10	1.20 ± 1.18	1.06 ± 1.30
Most enthusiastic when the team is performing poorly	.67 ± 1.32	1.00^{**} ± 1.27	.74 ± 1.27	.57 ± 1.33
Most enthusiastic when this leader is performing poorly himself	.25 ± 1.36	.43^{**} ± 1.35	.21 ± 1.33	.12 ± 1.38

Socially best accepted by his teammates	1.67 ± 1.07	1.77 ± 1.02	1.94^{**} ± .98	1.51 ± 1.15
Exerts most effort outside the field	1.48 ± 1.17	1.57 ± 1.10	1.91 ± 1.04	1.93 ± 1.07
The oldest player	1.04 ± 1.40	.79 ± 1.37	.91 ± 1.35	1.30^{**} ± 1.35
For the longest time player in the team	.69 ± 1.84	.63 ± 1.83	.83 ± 1.75	1.19^{**} ± 1.73

Note. The highest mean value for each characteristic is in boldface.

^aThese characteristics were rated on a 5-point Likert scale (1 to 5). All the other characteristics were measured on a 7-point Likert scale (-3 to 3).

* $p < .01$; ** $p < .001$

710 Appendix B

711 *Specific regression analyses for perceptions of players and coaches, for each of the four*
 712 *leadership roles evaluating the association between the 27 tested characteristics and the*
 713 *perceived quality of the four different leaders for the total sample (both subsample 1 and*
 714 *subsample 2). Only the standardized regression coefficients of the relevant associations (i.e.,*
 715 *$\beta > .10$; $p < .01$ for coaches and $p < .001$ for players and the total sample) are shown.*

Sport-specific characteristics	Task leader	Motivational leader	Social leader	External leader
<i>Players</i>	($R^2 = .27$)	($R^2 = .23$)	($R^2 = .16$)	($R^2 = .19$)
Most influence on the team confidence of his teammates	.20**	.22**	.17**	.19**
Socially best accepted by his teammates	.13**	.15**	.17**	
Encourages his teammates strongly during the game	.11**	.16**		
Most enthusiastic when the team is performing poorly	.13**			
Facial expressions or body language most clearly express positive emotions during the game			.10**	
Exerts most effort outside the field				.21**
<i>Coaches</i>	($R^2 = .29$)	($R^2 = .24$)	($R^2 = .24$)	($R^2 = .26$)
Most influence on the team confidence of his teammates			.13**	
Socially best accepted by his teammates			.13*	
Communicates the most when the team is performing poorly	.18**	.19**		
Exerts most effort outside the field		.11*	.17**	.32**
<i>Total sample</i>	($R^2 = .26$)	($R^2 = .22$)	($R^2 = .16$)	($R^2 = .19$)
Most influence on the team confidence of his teammates	.16**	.16**	.17**	.17**
Socially best accepted by his teammates	.12**	.14**	.16**	
Encourages his teammates strongly during the game	.11**	.15**		
Most enthusiastic when the team is performing poorly	.12**			
Exerts most effort outside the field				.23**

716 *Note.* ** $p < .001$; * $p < .01$

717

Appendix C

Specific regression analyses for male and female teams, for each of the four leadership roles evaluating the association between the 27 tested characteristics and the perceived quality of the four different leaders for the entire sample. Only the relevant associations ($\beta > .10$; $p < .01$) for each team gender, including their standardized regression coefficient, are shown.

Sport-specific characteristics	Task leader	Motivational leader	Social leader	External leader
<i>Male teams</i>	($R^2 = .26$)	($R^2 = .23$)	($R^2 = .18$)	($R^2 = .21$)
Most influence on the team confidence of his teammates	.17**	.16**	.17**	.18**
Socially best accepted by his teammates	.11**	.15**	.19**	
Encourages his teammates strongly during the game		.13**		
Communicates the most when the team is performing poorly	.10*	.10*		
Exerts most effort outside the field				.25**
<i>Female teams</i>	($R^2 = .30$)	($R^2 = .21$)	($R^2 = .16$)	($R^2 = .18$)
Most influence on the team confidence of his teammates	.13**	.14**	.15**	.14*
Socially best accepted by his teammates	.14**	.14*	.11*	
Encourages his teammates strongly during the game	.16**	.18**		
Most enthusiastic when the team is performing poorly	.15**			
Cheers the most	-.16**			
Most optimistic	.17**			
Exerts most effort outside the field		.11*		.23**

Note. ** $p < .001$; * $p < .01$

725 Appendix D

726 *The mean values for the characteristics of both the team captain and the four leadership*
 727 *roles, as perceived by players (P) and coaches (C) in the entire sample (including both*
 728 *subsamples). The highest value for each characteristic is indicated in bold.*

	Team captain		Task leader		Motivational leader		Social leader		External leader	
	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>	<i>P</i>	<i>C</i>
Status (starter versus bench player) ^a	4.58	4.70	4.72 ***	4.79 ***	4.47	4.65	4.04	4.33	3.92	4.10
Average playing time ^a	4.42	4.51	4.57 ***	4.60 ***	4.33	4.45	3.93	4.14	3.82	3.95
Highest level ever played	1.03	.93	1.46 ***	1.16 ***	1.02	.80	.81	.62	.79	.78
Sport competence	1.31	1.55	1.74 ***	1.89 ***	1.37	1.53	1.00	1.25	.88	1.04
Sport experience	1.57	1.45	1.75 ***	1.56 **	1.29	1.19	1.16	1.19	1.42	1.46
Training effort	1.11	1.58	1.27	1.73	1.33 ***	1.79 ***	1.07	1.55	1.00	1.31
Age	1.16	1.05	1.06	.98	.78	.81	.92	.90	1.29 ***	1.33
Team tenure	1.24 *	1.20	.68	.74	.59	.72	.82	.85	1.18	1.23

729 ^aThese characteristics were assessed on a scale from 1 (*almost never*) to 5 (*almost always*),
 730 while the other characteristics were assessed on a scale from -3 (*the worst of my team*) to 3
 731 (*the best of my team*).

732 * $p < .05$; ** $p < .01$; *** $p < .001$

733

734 Appendix E

735 *The mean values for the characteristics of both the team captain and the four leadership*
 736 *roles, for male teams (M) and female teams (F) separately. The highest value for each*
 737 *characteristic is indicated in bold. Paired t-tests reveal whether the difference between the*
 738 *best leader and the team captain is significant.*

	Team captain		Task leader		Motivational leader		Social leader		External leader	
	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>
Status (starter versus bench player) ^a	4.60	4.64	4.72 ^{***}	4.78 ^{***}	4.50	4.56	4.15	4.08	3.84	4.13
Average playing time ^a	4.41	4.51	4.54 ^{***}	4.65 ^{**}	4.32	4.44	3.97	4.01	3.74	4.01
Highest level ever played	1.03	.95	1.36 ^{***}	1.38 ^{***}	.97	.94	.80	.68	.85	.71
Sport competence	1.42	1.30	1.80 ^{***}	1.75 ^{***}	1.44	1.39	1.13	.97	.90	.92
Sport experience	1.57	1.48	1.68 ^{***}	1.73 ^{***}	1.27	1.25	1.24	1.04	1.47	1.37
Training effort	1.28	1.14	1.42	1.38 ^{***}	1.53 ^{***}	1.36	1.22	1.18	1.08	1.04
Age	1.12	1.16	1.00	1.10	.80	.77	.94	.87	1.32 ^{***}	1.26
Team tenure	1.21	1.27 [*]	.70	.68	.64	.62	.85	.79	1.23	1.12

739 ^aThese characteristics were assessed on a scale from 1 (*almost never*) to 5 (*almost always*),
 740 while the other characteristics were assessed on a scale from -3 (*the worst of my team*) to 3
 741 (*the best of my team*).

742 * $p < .05$; ** $p < .01$; *** $p < .001$